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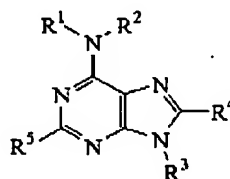
CURRENT LISTING OF CLAIMS

We claim:

1. (canceled)
2. (currently amended) The method of Claim ~~[[1]]~~ 10, wherein R^1 is a solid support.
3. (original) The method of Claim 2, wherein R^2 is a nitrogen protecting group.
4. (original) The method of Claim 2, wherein the reducing agent is selected from the group consisting of:
 CrX_2 , wherein each X is independently halide, and
 a mixture of 1,1'-dialkyl-4,4'-bipyridinium dihalide and a thiosulfate compound.
5. (currently amended) The method of Claim 4, wherein the nitro reducing step (a) ~~comprises a~~ is done in the presence of a protic solvent.
6. (currently amended) The method of Claim 4, wherein the 4,5,6-triaminopyrimidine produced in said step (a) is ~~substantially free~~ contains less than 10 mole percent of inorganic salts.
7. (currently amended) The method of Claim 4, wherein ~~substantially all~~ more than 90 mole percent of the solid support-bound pyrimidine ring remains bound to the solid support during said nitro group reducing step ([a]) D.
8. (original) The method of Claim 2 further comprising cleaving the substituted purine from the solid support to produce the purine compound where R^1 is hydrogen.
9. (currently amended) The method of Claim ~~[[1]]~~ 10, wherein the cyclizing agent is an orthoester, an ~~acyl~~ carboxylic acid anhydride, an acyl halide, a mixture of isothiocyanate and an oxidizing agent, a mixture isocyanate and an oxidizing agent, or a mixture of an aldehyde and an oxidizing agent.

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10. (currently amended) ~~The method of Claim 1, wherein the 5-nitropyrimidine compound is produced by steps comprising~~ A method for producing a substituted purine compound of the formula:



wherein

R¹ is a solid support, hydrogen, alkyl, cycloalkyl, or aryl;

R² is alkyl, cycloalkyl, aryl, or a nitrogen protecting group;

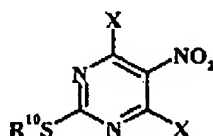
R³ is hydrogen, alkyl, cycloalkyl, aryl, or a nitrogen protecting group;

R⁴ is hydrogen, alkyl, aryl, or -NR⁶R⁷, where each of R⁶ and R⁷ is independently hydrogen, alkyl, aryl, or cycloalkyl; and

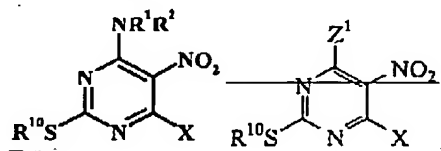
R⁵ is alkyl, alkoxy, alkenyl, alkynyl, aryl, aryloxy, cycloalkyl, cycloalkoxy, alkylthiol, arylthio, or -NR⁸R⁹, where each of R⁸ and R⁹ is independently hydrogen, alkyl, cycloalkyl, aryl, or a nitrogen protecting group, or R⁸ and R⁹ together with the nitrogen atom to which they are attached to form a heterocycle nonaromatic cyclic moiety of 3 to 8 atoms in which one ring atom is a nitrogen and a second ring atom is optionally a NR¹⁰ (where R¹⁰ is hydrogen or C₁₋₆ alkyl), O or S(O)_n (where n is an integer from 0 to 2), the remaining remaining ring atoms being C, where one or two C atoms may be optionally replace by a carbonyl group;

said method comprising:

- (a) contacting a 4,6-dihalo-5-nitro-2-thioether pyrimidine of the formula wherein R¹⁰ is alkyl, cycloalkyl, or aryl and each X is independently halide:

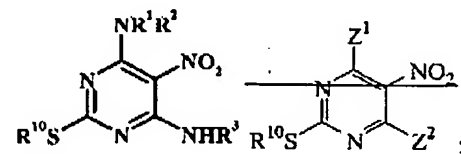


with a first amine compound of the formula $[[Z^1H]] HNR^1R^2$ to produce a 6-aminopyrimidine of the formula:

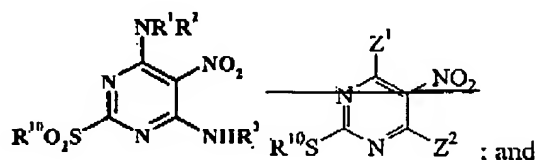


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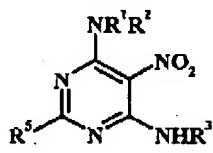
- (b) contacting the 6-aminopyrimidine with a second amine compound of the formula $[[Z^1H]]$ H_2NR^3 to produce a 4,6-diaminopyrimidine of the formula:



- (c) contacting the 4,6-diamino pyrimidine with an oxidizing agent to produce a 2-sulfonylpyrimidine of the formula:



- (d) contacting the 2-sulfonylpyrimidine with a nucleophile of the formula R^5-M wherein M is hydrogen, alkali metal, or a cuprate or a magnesium metal complex to produce a [[the]] 5-nitropyrimidine compound of the formula,



wherein

one of Z^1 and Z^2 is NR^1R^2 and the other is NHR^3 ;

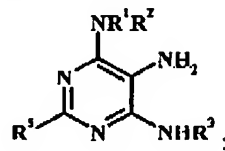
R^1 , R^2 , R^3 , and R^5 are those defined in Claim 1;

R^{10} is allyl, cycloalkyl, or aryl;

M is hydrogen, metal, or a metal complex; and

each X is independently halide.

- (e) contacting the 5-nitropyrimidine compound with a reducing agent to produce a 4,5,6-triaminopyrimidine of the formula:



and,

- (f) forming a purine ring by contacting the 4,5,6-triaminopyrimidine with a cyclizing agent to produce the substituted purine compound.

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11-22. (canceled)

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